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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,289	06/22/2001	Keith E. Newman	00533	8022
26285	7590	05/23/2005	EXAMINER	
KIRKPATRICK & LOCKHART NICHOLSON GRAHAM LLP 535 SMITHFIELD STREET PITTSBURGH, PA 15222			JENKINS, DANIEL J	
			ART UNIT	PAPER NUMBER
			1742	
DATE MAILED: 05/23/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/887,289

Applicant(s)

NEWMAN ET AL.

Examiner

Daniel J. Jenkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-11,52,53 and 59-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-11,52,53 and 59-67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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1. The Examiner has carefully considered Applicant's Response of 2/2/05. At this time, the Examiner makes a new rejection which is accordingly not made final.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Martel.

Martel discloses a method of forming a powder metal material comprising:

providing a metal powder comprising sponge iron (col 3, line 5);
filling the metal powder in a mold (col. 3, line 6);
compressing the metal powder at a pressure less than 20 tsi (col. 3, line 8); and
sintering the compressed metal powder to form a powder metal material (col. 3, lines 11-15).

4. Claims 1, 2, 3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Whiteheart.

Whiteheart discloses a method of forming a powder metal material comprising:

providing a metal powder comprising sponge iron (col 2, line 71);
filling the metal powder in a mold (col. 2, line 70);
compressing the metal powder at a pressure of 10 tsi (col. 3, line 8); and

sintering the compressed metal powder to form a powder metal material (col. 2, lines 74-75).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-3, 8-10, 52 and 59-64 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinderle et al.

Rinderle et al. discloses the invention substantially as claimed. Rinderle et al. discloses a method of forming a powder metal material comprising:

providing a metal powder comprising sponge iron (col 1, line 53);

filling the metal powder in a mold (col. 1, lines 55-56);

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compressing the metal powder at a pressure of 5 to 40 tsi (col. 1, lines 55-57);
and

sintering the compressed metal powder to form a powder metal material (col. 2, lines 18-19).

The Examiner finds that the inclusion of a binder is not inconsistent with the limitation to free of lubricant.

The Examiner finds that the overlap of ranges establishes a prima facie case of obviousness, and provides the discussion from MPEP 2144.05 to support this position.

In particular, Rindle et al. specifically addresses when the compression pressure is of 5 tsi in his discussion (col. 1, lines 59-62).

I. OVERLAP OF RANGES

In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (The prior art taught carbon monoxide concentrations of "about 1-5%" while the claim was limited to "more than 5%." The court held that "about 1-5%" allowed for concentrations slightly above 5% thus the ranges overlapped.); *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997) (Claim reciting thickness of a protective layer as falling within a range of "50 to 100 Angstroms" considered *prima facie* obvious in view of prior art reference teaching that "for suitable protection, the thickness of the protective layer should be not less than about 10 nm [i.e., 100 Angstroms].". The court stated that "by stating that suitable protection is provided if the protective layer is about 100 Angstroms thick, [the prior art reference] directly teaches the use of a thickness within [applicant's] claimed range."). Similarly, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.).

> "[A] prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a *prima facie* case of obviousness." *In re Peterson*, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003). However, if the reference's disclosed range is so broad as to encompass a very large number of possible distinct compositions, this might present a situation analogous to the obviousness of a species when the prior art broadly discloses a genus. *Id.* See also *In re Baird*, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); MPEP § 2144.08.<

8. Claims 1-5, 7-11, 52, 53 and 59-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill.

Hill discloses the invention substantially as claimed. Hill discloses a method of forming a powder metal material comprising:

providing a metal powder comprising sponge iron (col 3, lines 7-37);

filling the metal powder in a mold (col. 3, lines 52-53);

compressing the metal powder at a pressure of 10 to 40 tsi (col. 3, lines 52-5);

and

sintering the compressed metal powder to form a powder metal material (col. 2, lines 18-19), wherein the metal material has a density of greater than 90%, meeting Applicant's limitation to green strength and density.

Hill discloses that a lubricant may be used, and further states that "If a lubricant is used...." col. 3, lines 60-63, indicating that one of ordinary skill can elect to not use a lubricant, such as when die wear for producing a small number of parts is performed. Omission of an element with a corresponding omission of function is within the level of ordinary skill. See *In re Wilson* 153 USPQ 740; *In re Larson* 144 USPQ 347.

The Examiner finds that the overlap of ranges establishes a prima facie case of obviousness, and provides the discussion from MPEP 2144.05 to support this position (see paragraph 7 above).

Hill further discloses adding ferrochrome powder to the metal powder, but is silent as to if the ferrochrome is formed by atomization, but the Examiner notes that this is a common source of iron alloy spherical powders.

Hill further discloses that conventional finishing operations can be performed on the sintered material (col. 4, lines 16-18), including heat treatment, which hot forging is a known post sintering step to work harden the formed body.

Hill is silent as to the die temperature, but lack of discussion would indicate that the die was unheated. It is common knowledge to heat the die in the same field of endeavor for the purpose of improving binder compaction, and to do such in the invention of Hill when using a binder would thus have been obvious.

9. Claims 5 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill in view of Dunn.

Hill discloses the invention substantially as claimed (see paragraph 8 above). However, Hill does not disclose the type of sintering furnace, but leaves the selection to one of ordinary skill

Dunn teaches to use induction sintering in the same field of endeavor for the purpose of minimizing the handling of the formed parts when minimal contamination is required (col. 2, lines 50-53).

It would have been obvious to one having ordinary skill in the art at the time of the invention to use the induction sintering of Dunn in the invention of Hill in order to minimize contamination of the formed sintered material.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hill in view of Semel '800 or Luk et al. '639.

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Hill discloses the invention substantially as claimed (see paragraph 8 above). However, Hill does not disclose wherein the die is lubricated.

Both Semel '800 and Luk et al. '639 teach that it is known to lubricate a die wall during compaction to reduce die wall wear, thus to add this step to the invention of Hill would be obvious to reduce die wear.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Jenkins whose telephone number is 571-272-1242. The examiner can normally be reached on M-TH6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1242. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel J. Jenkins
Primary Examiner
Art Unit 1742

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